

- a. Identifying the upper limit for nicotine, tar, and other toxic substances in cigarettes.
 - b. Limit the advertisement, set the warning signs on the advertised material.
 - c. Conduct studies needed in the subject of tobacco.
- Ministry of health responsible to have the inspectors, which can issue tickets for the lawbreaker.

GYTS goals and objectives

GYTS is a school- based tobacco specific survey, which focus on adolescent's age 13-15 years (grade 7-10). It assess students attitude, knowledge, and behavior related to tobacco use and exposure to environmental tobacco smoke, as well as youth exposure to prevention programs, and media messages aimed preventing and reducing youth tobacco use.

Also the GYTS provides information on where tobacco products are obtained and used, as well as the effectiveness of enforcement measures.

The GYTS will address the following issues:

- *Determining the level of tobacco use.*
- *Estimating the age of initiation of cigarette use.*
- *Estimating the level of susceptibility to become a cigarette smoker.*
- *Estimating the exposure to tobacco advertising.*
- *Identifying key intervening variable, such as attitude and beliefs on behavioral norms with regard to tobacco use among young people.*
- *Assessing the extent to which major prevention programs are reaching school-based populations and establish the subjective opinions of those populations regarding such intervention.*

Methodology

Study design and sample

Our sampling frame consists of all schools containing grades 7, 8 9, and 10. with grades 7, 8, 9 being intermediate, and 10 being 1st of the secondary. A two- stage cluster sample design was used to produce a representative sample of students in grade 7 through 10. Data about schools and the number of students were obtained from the ministry of education.

School level –the first stage-sampling frame consisted of all schools containing grades 7 through 10. Since many of the schools had zero enrollments for some of the grades, our sampling frame was broken in two as follows: 76% of the schools were intermediate, and 24% were secondary. Schools were selected with probability proportional to school enrollment size.

Class level- the second sampling stage consisted of systematic equal to probability sampling (with a random start) of classes from each school that participated in the survey. All classes in the selected intermediate schools were included in the sampling frame .in

the case of secondary schools; only all 10th grade classes were included in the frame. All students in the selected classes were eligible to participate in the survey.

Overall response rate:

Schools-100% (50 of 50 sampled schools participated)

Students-95.19% (2158 of the 2269 sampled students completed usable questionnaire).

Overall response rate-100% *85.66%=95.19%.

The questionnaire used is the same used by all countries at EMRO who took part in the GYTS with 18 of the questions were modified to take into account local tobacco-using behavior and the psycho- social and cultural differences so it can suits Bahrain.

A weight has been associated with each questionnaire to reflect the likelihood of sampling each student and to reduce bias by compensating for differing patterns of non-response. The weight used for estimation is given by:

$$W=W1*W2*f1*f2*f3*f4$$

W1= the inverse of the probability of selecting the school

W2= the inverse of the probability of selecting the classroom within the school

f1= a school-level non-response adjustment factor calculated by school size category (small, medium, large).

f2 = a class adjustment factor calculated by school

f3 = a student- level non-response adjustment factor calculated by class

f4= a post stratification adjustment factor calculated by gender and grade

Analysis

We used Epi-info 2002, software package that accounted for the complex sampling design and weighing factors in the data set, to calculate slandered errors and prevalence estimates. Statistical differences included in the report were determined by comparing the 95% confidence intervals. If the ranges of the 95% CI did not overlap then the difference were statistically significant.

Results

Tobacco use

Table 1: Percent of students who use tobacco, Bahrain GYTS, 2003

Category	Ever Smoked Cigarettes, Even One or Two Puffs ESMOKER Table 1	Current Use			Never Smokers – Susceptible to Initiating Smoking SUSCEPNS Table 112
		Any Tobacco Product CTOB Table 5	Cigarettes CSMOKER Table 3	Other Tobacco Products OTOB Table 2	
Total	28.4 (±6.2)	23.3 (±4.6)	14.3 (±3.8)	18.2 (±3.5)	
Sex					
Male	41.5 (±6.2)	33.5 (±4.6)	23.1 (±4.0)	24.9 (±3.8)	
Female	14.1 (±3.8)	11.9 (±2.8)	4.6 (±1.8)	10.6 (±2.4)	